

Tamir

Tamir is directed at a sports event video manipulating system. The system is limited to the analysis of video clips captured during sporting games. The system is capable of indexing video segments, on-line graphical blending and audio dubbing, editing and storing indexed video segments, spotting key-words on the original audio channel of the video input, automatic tracking and highlighting of objects, and creation of a wide field of view background image of the playing fields. (Col. 7, Line 28 – Col. 8, Line 16). In contrast to Applicants' claimed invention, Applicants cannot find where Tamir discloses or make obvious a method or system related to automatic panning of digital content while zoomed.

It is well-established that to establish *prima facie* obviousness, all the claim limitations must be taught or suggested by the prior art. In addition, there must be some teaching, motivation or suggestion in either the prior art, or the references themselves to make the combination asserted by the Examiner. In reviewing the Office Action, the Examiner asserts "it would have been obvious to skilled in the art to modify the system of Tamir, to provide it with a zoom mode at the beginning of the process, to take account of the magnification or (zoom in and zoom out) as Tamir, et al. clearly suggests, and in order to focus on the desired portion of the image for reliable and efficient processing."

Measuring a claimed invention against the standard established in §103 requires the oft-difficult but critical step of casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references in the then-accepted wisdom in the field.¹ Close adherence to this methodology is especially important in the case of less technologically complex inventions, where the very ease with which the

¹ W.L. Gore & Assoc., Inc. v. Garlock, Inc., 721 F.2d. 1540, 1553, 220 USPQ 303, 313 (Fed. Cir. 1983).

invention can be understood may prompt one "to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher."²

Case law makes it clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references.³ Combining prior art references without evidence of such a suggestion, teaching or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability – the essence of hindsight.⁴ Evidence of a suggestion, teaching or motivation to combine may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved, although "the suggestion more often comes from the teachings of the pertinent references."⁵ ("The Board must identify specifically . . . the reasons one of ordinary skill in the art would have been motivated to select the references and combine them").

The showing of such suggestion, teaching, or motivation must be clear and particular.⁶

Broad conclusory statements regarding the teaching of multiple references, standing alone, are not "evidence."⁷ As previously stated the Examiner asserts that it would have been

² Id.

³ In re Dembiczak, 50 USPQ 2d 164, 1617 (Fed. Cir. 1999).

⁴ Id.; See, e.g., Interconnect Planning Corp. v. File, 774 F.2d 1132, 1138, 227 USPQ 543, 547 (Fed. Cir. 1985).

⁵ Dembiczak, 50 USPQ 2d 164, 1617 (Fed. Cir. 1999); In re Roffet, 149 F.3d 1350, 1359, 47 USPQ 2d 1453, 1459 (Fed. Cir. 1998)

⁶ Dembiczak, 50 USPQ 2d 164, 1617 (Fed. Cir. 1999); See, e.g., C.R. Bard, Inc. v. M3 Sys., Inc., 157 F.3d 1340, 1352, 48 USPQ 2d 1225, 1232 (Fed. Cir. 1998).

obvious to one "skilled in the art to modify the system of Tamir to provide it with a zoom mode at the beginning of the process to take account of the magnification or (zoom in and out) as Tamir et al. clearly suggests, and in order to focus on the desired portion of the image for reliable and efficient processing." With regard to the Examiner's assertion of the motivation of one skilled in the art to modify the system of Tamir, a careful examination of Tamir as cited reveals that Tamir rather than teaching "detecting motion of an object within the portion of the image" Tamir instead teaches monitoring all objects in the scene. Tamir teaches "all moving objects in the scene (players, referee's and the ball) are continuously detected and tracked from frame to frame. Tamir is directed to a video manipulations system for viewing sports events by for example coaches and players to understand their own and opponents' past performance. Tamir ¶ 1, lines 13-16. "Sports commentators also view and show video representations of team games in the course of analyzing these games for their viewers. Tamir ¶ 1, lines 16-18. Rather than zooming on a single object, as required in the claims, Tamir teaches highlighting a video representation of an object included in a sequence of video representations of an event, such as a sport event." Tamir ¶ 8, lines 50-52, also see lines 45-46, lines 5-8.

"The term "highlighting" is used herein to refer to any suitable emphasis of an individual object and in its display, or of a portion of an individual object, such as, but not limited to, its boundary, as detected as defined in step 200 or to a manipulation of the object or object portion such as color change, shadowing, blinking, or adding in emphasizing elements such as a framing element surrounding the object, an arrow continuously pointing at the object, a caption

(...continued)

⁷ Dembiczak, 50 USPQ 2d 164, 1617 (Fed. Cir. 1999); e.g., *Elmurry v. Arkansas, Power & Light Co.*, 995 F.2d 1576, 1578, 27 USPQ 2d 1129, 1131 (Fed. Cir. 1993); *In re Sichert*, 566 F.2d 1154, 1164, 196 USPQ 207, 217 (CCPA 1977).

appropriate to the object which travels continuously along their width.” (Tamir ¶ 11, lines 18-27).

Tamir teaches resolving a completely different problem than the claims as shown below:

“A problem that has been encountered and identified as a possible obstacle to the edge detection task is image degradation due to motion induced blur. This may be due either to camera scanning or to object motion. (Tamir, ¶ 9, lines 21-24). Proper measures to prevent edge and texture aliasing are taken when applying any part of these dynamic emphasizing techniques.” (Tamir, ¶ 11, lines 27-29)

Accordingly, since Tamir teaches avoiding artifacts such as motion induced blur and aliasing and since Tamir teaches the identification of an object by highlighting it, Tamir teaches away from the claims because any zooming in on an object would aggravate motion induced blur, and possibly would aggravate edge and texture aliasing when applying a zoom function to the teachings of Tamir. As such, since the previously described portions of Tamir teach away from the claims, one skilled in the art would not be motivated to modify Tamir as suggested in the Office Action to perform a zoom function as claimed.⁸

The only reference in Tamir related to a zoom function states “the tracking procedure takes into account the fact that there may be a change of magnification (zoom in and out) and of objects’ poses throughout the succession of frames.” (¶ 10, lines 10-13). However, the zoom function described is discussed in context with the problems encountered and identified as possible obstacles to the tracking procedure. (¶ 9, lines 20-27). Additionally, immediately after introducing the concept of zoom, Tamir discusses problems and obstacles associated with the

⁸ A prior art reference must be considered in its entirety, i.e. as a whole including portions that would lead away from the claimed invention. (W.L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984) MPEP 2141.02).

tracking procedure including "fusion," "slitting," and "occlusion." (Tamir ¶ 10, lines 15-19). Accordingly, taken into proper context, Tamir teaches the avoidance of zooming because zooming and attempting to track all moving objects in the scene (¶ 10, lines 28-30) would exasperate the problems and obstacles sought precisely to avoid. Therefore, taking the teachings of Tamir into proper context shows that Tamir teaches a method and apparatus for tracking all moving objects in the scene (players, referees and the ball) by highlighting the objects of interest while avoiding the problems associated with such an endeavor by attempting to mitigate motion induced blur, antialiasing, and to accommodate other situations such as fusion, slitting, and occlusion. Accordingly, not only does Tamir teach away from the zoom mode as required in the claims as filed, such a modification as asserted in the Office Action would indeed change the principle of operation of Tamir because modifying Tamir to zoom while tracking all moving objects would greatly increase problems associated with the tracking method of Tamir specifically sought to avoid.⁹

Zoom Further, if one were to modify Tamir to provide the zooming mode function as claimed, rather than highlighting the tracked object, such a modification to Tamir would render Tamir unsatisfactory for its intended purpose because again rather than zooming in on an object, Tamir teaches tracking all moving objects in a scene for the purpose of analyzing a sporting event as discussed above.¹⁰ For example, Tamir seeks to solve the problem of analyzing a "whole field of view of a sporting event, and therefore, zooming in on an object would render such an analysis

⁹ If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). See MPEP 2143.01.

¹⁰ If the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 200, 221 USPQ 1125 (Fed. Cir. 1984), MPEP 2143.02.

of the whole field of view impossible such that a modification as suggested in the Office Action would make the analysis sought to be performed in Tamir greatly hindered, if not, impossible.

For example, Tamir states, "A problem usually encountered in the analysis of team games is the difficulty in conceptualizing a whole wide field of view of an offensive or defensive tactic out of the succession of partially overlapping video frames that were captured by at least one t.v. camera using relatively narrow fields of view centering around the instantaneous location of the ball and active players." (§ 11, lines 37-44). Accordingly, the modification proposed in the Office Action would render Tamir as modified unsatisfactory for its intended purpose.

Independent Claim 1

Same argument (

Contrary to the assertion in the Office Action, there is no motivation or reason to modify Tamir to in order to provide a zoom mode as claimed as such modification fails to describe, teach or suggest each and every element of the claimed invention. Additionally, one would not have any reasonable expectation of successfully reproducing the claimed invention, if so, modified. Applicant respectfully submits that the Examiner has misinterpreted Tamir and merely attempted to reconstruct the subject matter in claim 1, rather than pointing to specific information in Tamir that suggests the combination as claimed. As stated above, Tamir describes solving the problem usually encountered in the analysis of team games where the difficulty is in conceptualizing a whole wide field of view of an offensive or defensive tactic out of the succession of partially overlapping video frames that were captured by at least one television camera using relatively narrow field of view for entering around the location of the ball and active players. (Tamir (§ 11, lines 38-44). As described above, not only is there no motivation to combine or to modify Tamir to perform the zoom mode as claimed, as previously stated, Tamir actually teaches away from a zoom mode. Further the proposed modification to

Tamir would result in impermissibly changing the principle of operation of Tamir, and further yet would render Tamir unsatisfactory for its intended purpose. Applicant respectfully submits that the Examiners obviousness analysis is limited to a discussion of the way Tamir can be modified to read on the claim. However, the alleged reference-by-reference and limitation-by-limitation analysis fails to demonstrate how Tamir teaches or suggests the combination to yield the claimed invention. As a result, Applicants submit that the Office Action fails to establish a *prima facie* case of obviousness for all the claims.

Because Tamir is directed at a system that teaches away from allowing a user to zoom in upon a portion of an image, Applicants respectfully request a showing as to a reference that would make obvious the use of a zoom mode in connection with the editing system disclosed by Tamir. Furthermore, the remainder of Applicants' Claim 1 is not made obvious by the Tamir reference. The claimed method of identifying a first portion of an image is not met by step 100 of Figure 3A in Tamir. Step 100 references the process in which the video encoder *20 grabs and digitizes the first video frame*. (Col. 8, Lines 53-55; Emphasis Added). In contrast to grabbing an entire video frame, Applicants' claimed invention is in reference to the identification of a first *portion of an image*. (Emphasis Added). As taught by the Applicants' claimed invention, the identification of a first portion of an image corresponds to a zoom portion selected by the user that indicates the portion of an image/video that the user wishes to magnify. (Page 9, last three paragraphs). Tamir fails to disclose the identification of a first portion of an image in connection to a selected zoom mode. As a result, Tamir fails to make obvious the remaining elements of Claim 1, namely the selection and display of a second portion of the image when motion is detected of an object within the first portion of the image. Tamir does not make obvious any

portion of Applicants' Claim 1. Applicants respectfully submit that Claim 1 is in proper condition for allowance.

Claim 5 corresponds to the television system claim of Claim 1 and is also believed to be in proper condition for allowance. Additionally, Applicants repeat the same remarks with respect to claim 1, and therefore Claim 8 is believed to be in proper condition for allowance because of its similarities to Claim 1; Claim 8 contains the steps of, inter alia, beginning a zoom mode and identifying a first portion of an image.

With regard to Claim 2, Applicants respectfully repeat the relevant remarks made with respect to Claim 1. Specifically, Applicants note that Tamir fails to make obvious any use of a zoom mode or the identification of a first or second portion of an image. Therefore, Tamir also fails to teach any subsequent limitation upon Claim 2. Specifically Tamir does not anticipate the step of terminating the zoom mode when at least one edge of the second portion of the image extends beyond the image.

Claim 2 requires "When at least one edge of the second portion of the image extends beyond the image, the zoom mode is terminated." The Examiner's citation to step 170 of Figure 3B does not teach this limitation. Figures 3A and 3B show a flowchart for the process of highlighting an object in a sequence of a video representation of an event. Step 170 pertains to the detection of objects that have entered or exited the camera's field of view. The system executes a disappearance analysis to monitor objects that have left the field of view and a reentry analysis to identify objects that have reentered the scene/camera field of view. (Col. 10, Lines 35-45). For example, a player in a sporting event may move outside of the camera's field of view. When this event occurs, a disappearance analysis is executed to monitor this change. Step 170 does not teach the limitation in which a *zoom mode is canceled* when an edge of the second

portion of the image extends beyond the image. (Emphasis Added). Tamir does not distinguish between a portion of the image and the entire image whereby the portion of the image represents a magnified portion of the image as defined by a user's zoom parameters. Moreover, Applicants' claimed invention does not relate to the technique of highlighting as taught by Tamir. Applicants respectfully believe Claim 2 is in proper condition for allowance.

Claim 9, dependent upon Claim 8, contains the same language as Claim 2 and is therefore also believed to be in proper condition for allowance.

With respect to Claim 4, Applicants respectfully repeat the relevant remarks made with respect to Claim 4. Because Tamir does not anticipate the identifying of a first or second *portion* of an image and is only concerned with the entire camera field of view, Applicants maintain that Tamir cannot make obvious any subsequent limitation describing the type of image corresponding to a selected portion. (Emphasis Added). Furthermore, Tamir is silent as to the use of detecting motion of an object within the portion of the image by use of examining MPEG2 motion vectors. Applicants respectfully request a showing including the column and line number within Tamir that teaches this limitation. Accordingly, Applicants respectfully believe Claim 4 is in proper condition for allowance.

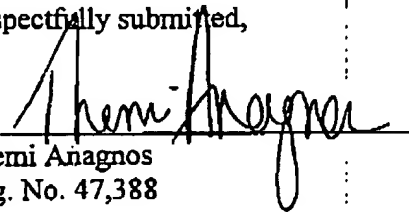
Claim 11 depends upon independent Claim 8 and is therefore also believed to be in proper condition for allowance. Furthermore, Applicants take notice that Claim 16 corresponds to the system claim of Claim 4 and was not rejected. For the foregoing reasons, Applicants maintain that Claim 16 is also in proper condition for allowance.

Applicants respectfully note that Claim 7, dependent upon allowable Claim 5, contains additional patentable subject matter and is in proper condition for allowance.

Applicants respectfully request that the pending claims be allowed to issue. Should the Examiner wish to discuss any aspect of the application, he is invited to contact the undersigned at his convenience directly at (312) 609-7970.

Respectfully submitted,

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